

Project Based Diffrentiated Learning To Enhance Student Learning Outcomes In Social Studies In The 21 st Century

Faizah Hijriati¹, Ade Budhi Salira²
faizahhijriati@upi.edu¹, budhisalira@upi.edu²

Indonesia University of Education, Bandung, Indonesia^{1,2}

Abstract. This study aims to evaluate the effectiveness of integrating a differentiated learning approach with the Project-Based Learning (PjBL) model in enhancing student learning outcomes in Social Studies (IPS) in the 21st century. The background of this research highlights the importance of learning strategies that can address the diversity of students' learning styles and foster critical thinking, collaboration, and creativity skills. The study employs a descriptive qualitative approach with ninth-grade students of State Junior High School 29 Bandung as the subjects. Students' learning styles were mapped using the VARK instrument, covering visual, auditory, and kinesthetic types, which served as the basis for designing differentiated project-based activities. The results indicate improvements in students' cognitive, affective, and psychomotor domains. Teachers acted as facilitators, adapting their guidance strategies to students' needs and readiness. Digital-based assessments enabled instant feedback, strengthening learning reflection. The integration of PjBL and differentiated learning resulted in an inclusive, adaptive, and relevant learning process aligned with contemporary educational demands. This approach offers a strategic alternative in designing meaningful learning experiences that optimally accommodate students' potential.

Keywords: 21st-Century, Differentiated Instruction, Learning Outcomes, Learning Styles, Project-Based Learning

INTRODUCTION

Education plays a pivotal role in human development, enabling individuals to realize their full potential. According to Law No. 20 of 2003 on the National Education System of Indonesia, the goal of national education is to develop students' capabilities to become faithful, pious, morally upright, healthy, knowledgeable, creative, independent, and responsible democratic citizens. Amid rapid advancements in science, technology, and globalization, education has undergone significant transformation. The 21st-century education paradigm demands changes in curriculum, media, and technology integration (Rahayu et al., 2021). Faizin et al. (2023) emphasize that both teachers and students must adapt to meet the challenges of modern society, requiring innovative, creative, and effective teaching designs (Anugrah, 2022).

Creativity has become one of the core competencies in twenty-first-century education. It enables learners to navigate complex problems and generate innovative solutions across disciplines. However, traditional educational systems often limit creativity by emphasizing standardized curricula and cognitive assessment. The OECD (2019) reported that 60% of students felt that classroom learning did not encourage the exploration of original ideas. This condition indicates the urgent need for a more flexible and student-oriented pedagogical model. To address this issue, differentiated instruction (DI) emerges as a strategic approach that accommodates learners' diverse abilities, interests, and readiness levels (Saiful Almujaib, 2023).

Differentiated instruction, as defined by Tomlinson (2001, in Fitriyah & Bisri, 2023), is a learning approach that adjusts content, process, and product based on learners' characteristics. It does not require teachers to create separate lessons for every student, but rather to provide flexible learning experiences suited to individual needs. This approach is closely related to humanistic learning theory, which emphasizes the recognition of individual differences, self-actualization, and personal responsibility (Herwina, 2021; Suralaga, 2021). By integrating these principles, differentiated instruction helps students develop confidence, motivation, and a positive learning identity (Perni, 2019).

Another approach that aligns with twenty-first-century learning is Project-Based Learning (PjBL), which focuses on real-world problem-solving and active student engagement. PjBL encourages learners to collaborate, inquire, and apply their knowledge through meaningful projects (Pratiwi et al., 2020). Mahendra (2017) found that PjBL promotes conceptual understanding by linking theory with real-life contexts. When combined with differentiation strategies, PjBL allows for flexible grouping, task variation, and personalized feedback (Purnawanto, 2023). Firdaus and Bakhtiar (2022) noted that differentiated PjBL enables students to achieve optimal conceptual mastery and deeper understanding through projects aligned with their capabilities and interests.

Nevertheless, despite the proven effectiveness of both approaches, most previous studies have implemented them separately. Limited research has investigated their integration as a unified model to enhance student creativity, particularly in the Indonesian education context. Moreover, creativity as a learning outcome is often marginalized within conventional assessment systems, as noted by Beghetto (2017), who highlighted that overly structured classrooms restrict students' creative self-efficacy. In response to these gaps, this research integrates differentiated instruction and project-based learning to foster creativity, motivation, and meaningful engagement in classroom learning.

This study was conducted at State Junior High School 29 Bandung, a school that has begun adopting innovative learning strategies but has not yet fully implemented differentiation across its instructional design. The partial application of differentiation indicates a need for a more comprehensive and systematic approach. Therefore, this research aims to explore the effectiveness of a differentiated project-based learning model in enhancing students' creativity and engagement. Specifically, the objectives of this study are: (1) to provide empirical evidence of the impact of differentiated PjBL on students' creativity, (2) to offer practical recommendations for teachers to design inclusive learning environments, and (3) to support educational transformation toward a creativity-oriented curriculum aligned with twenty-first-century competencies. This study differs from previous research in its focus on the integration of both pedagogical models, offering a novel framework for promoting innovation and adaptability among learners in the Indonesian education setting.

This study contributes to the growing body of knowledge on 21st-century education by integrating differentiated instruction and Project-Based Learning (PjBL) within the context of social studies education. While most previous research has focused on either differentiation or project-based learning as separate approaches, this study provides an empirical framework that combines both to address diverse learning styles in a single classroom. The findings are expected to offer practical insights for educators in developing countries, particularly in Southeast Asia, where inclusive and adaptive pedagogical models are increasingly needed to meet global educational challenges.

RESEARCH METHOD

This research was conducted at State Junior High School 29 Bandung with the research subjects being 35 students of class IX F. The selection of this school was based on the consideration that differentiated learning had not been fully implemented, especially in its integration with project-based learning models. The research took place in May 2025, coinciding with the implementation of the third cycle of the learning process. This study employed a qualitative method with a descriptive approach. Such an approach was chosen to describe in depth the implementation process of project-based differentiated learning in Social Studies subjects, particularly on the topic of netiquette or online ethics. The study aimed to reveal the learning phenomenon in a naturalistic and contextual manner rather than to generalize the findings.

The initial stage of the research began with a non-cognitive diagnostic assessment to identify students' learning style tendencies. The assessment was carried out online using instruments available on the VARK Learn website. This instrument was designed to determine students' learning profiles based on four main categories: visual, auditory, reading/writing, and kinesthetic (VARK). The results of the assessment were used as the basis for grouping students according to similar learning style tendencies. These groupings then served as the foundation for planning the project-

based differentiated learning strategies so that the learning process could be adjusted to the cognitive characteristics and preferences of each student.

Data were collected through three main techniques, namely observation, interview, and documentation. These three techniques simultaneously functioned as a triangulation strategy to ensure the validity and credibility of the obtained data. Observations were conducted systematically during the learning process to record students' participation levels, peer interactions, and the effectiveness of teacher strategies in managing learning. Semi-structured interviews were carried out with the Social Studies teacher and several selected students to explore their perceptions and experiences regarding the implemented learning model. Documentation included students' project results, reflection notes, and assessment instruments used during the learning process.

The collected data were analyzed using Miles and Huberman's interactive analysis model, which consists of four stages: (1) data collection, (2) data reduction, (3) data display, and (4) conclusion drawing or verification. The analysis was carried out continuously from the beginning to the end of the research process to identify thematic patterns, learning process dynamics, and the influence of the applied approach on students' learning development. The analysis mainly focused on the interrelation among students' learning styles, differentiation strategies, and the effectiveness of project-based learning in developing cognitive, affective, and psychomotor aspects of students.

RESULT AND ANALYSIS

1.1 Students' Learning Style Profile

Implementation of project based differentiated learning was carried out in May 2025 in class IX F of State Junior High School 29 Bandung. The activity began with a diagnostic assessment using the VARK instrument to identify students' learning style tendencies. The distribution of students' learning style is presented in Figure 1 below.

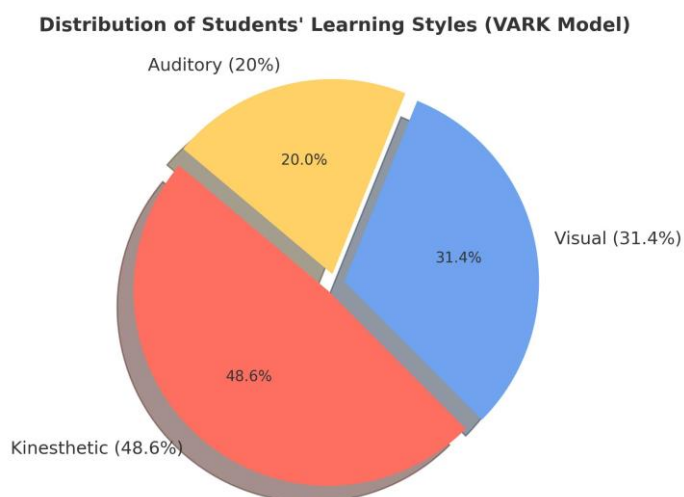


Fig 1. Distribution of Students' Learning Styles (Source: Research Data, 2025)

The results of the assessment revealed that kinesthetic learning style was dominant among 17 students (48.6%), followed by visual learning style with 11 students (31.4%) and auditory learning style with 7 students (20%). This variation indicates that each student possesses a different learning preference, thereby demanding an adaptive instructional approach. This finding supports the view of Marlina (2019:45) and Ahmad et al. (2021:67), who state that adapting instructional strategies to students' learning styles contributes to higher engagement and improved learning outcomes.

1.2 Integration of Differentiated Learning into PjBL Strages

Differentiated instruction was integrated into each stage of the Project-Based Learning (PjBL) syntax. In the first stage, students and teachers collaboratively identified the central problem related to the project topic netiquette (internet ethics). The topic was chosen for its relevance to students' daily lives, aiming to stimulate curiosity and responsibility in learning. As noted by Amrin, Husnu, and Yusri (2024:33) and Rizky and Wulandari (2022: 27), meaningful and contextual projects enhance active participation and student motivation.

In the second stage, project planning was carried out collaboratively between teachers and students. Students were involved in determining project objectives, assigning roles, and scheduling activities. Teachers functioned as facilitators to ensure that the project plan remained realistic and aligned with the learning objectives. At this stage, process differentiation was systematically applied. This aligns with Gheyssens et al. (2020:12) and Putra et al. (2023:8), who emphasized that the use of educational technology and varied strategies enhances inclusivity and learning outcomes in differentiated instruction.

1.3 Project Implementation and Scaffolding

The third stage focused on project implementation based on the readiness levels of each group. Teachers provided intensive guidance for students with lower readiness levels, while higher-performing students were given autonomy to explore more complex tasks. This reflects Tomlinson's (2001:56) principle that process differentiation not only considers students' academic ability but also integrates their interests and motivation. The fourth **stage** involved project monitoring. Teachers actively supervised the progress of students' work, offered formative feedback, and facilitated interim presentations as reflection opportunities. The application of scaffolding theory (Sawyer, 2006:91) was evident through the provision of temporary supports that guided students toward learning independence. This aligns with Sari and Handayani (2021:44), who highlighted that scaffolding enables students to internalize problem-solving strategies gradually.

1.4 Evaluation and Reflection

The fifth stage focused on evaluating the final project product. Students were allowed to choose their preferred final format according to their interests and creativity. Most groups chose to design posters as media to convey messages about netiquette. The evaluation was conducted using assessment rubrics that considered both process and product aspects. This approach aligns with findings by Dewi (2023:22), Hasibuan (2023:17), and Firdaus (2020:65), who noted that PjBL effectively improves creativity and academic achievement when students have autonomy in expressing their learning outcomes.

The final stage was reflection. Students reviewed their learning journey from project design to completion, while teachers administered a post test using the Wordwall platform. The test provided direct feedback measuring students' progress in cognitive, affective, and psychomotor domains. Results indicated a significant improvement, with the average pre-test score increasing from 70 to 85 in the post-test. This demonstrates that students not only enhanced conceptual understanding but also developed stronger self-confidence, collaboration, and problem-solving abilities.

In addition, students' feedback showed a highly positive response. Many stated that learning felt more engaging and enjoyable compared to traditional methods. They felt more involved, free to express creativity, and able to learn according to their preferred styles. These findings are consistent with Hwang et al. (2020:11) and Rahmawati et al. (2021:37), who revealed that differentiated learning based on students' needs significantly enhances motivation and engagement. Tomlinson and Imbeau (2010:15) also emphasized that differentiation fosters an inclusive environment that values diversity and promotes active participation.

1.5 Summary of Findings

Overall, the implementation of differentiated instruction within the Project-Based Learning model has proven to create inclusive, adaptive, and meaningful learning experiences. Students' positive engagement and improved learning outcomes reflect that this strategy effectively addresses the

demands of 21st-century education. Therefore, the integration of PjBL and differentiated learning can serve as a transformative approach for teachers aiming to cultivate creative, independent, and responsible learners.

The findings of this study extend the discourse on differentiated and project-based learning beyond local contexts. By demonstrating how these approaches can be effectively integrated within social studies classrooms, this research provides a scalable and contextually adaptable framework for promoting inclusive and meaningful learning. The model proposed in this study can serve as a reference for educators and researchers internationally who aim to develop 21st-century competencies through student-centered instruction.

CONCLUSION

The findings of this study indicate that the integration of differentiated instruction with the Project-Based Learning (PjBL) model effectively enhances students' learning outcomes in Social Studies within the context of 21st-century education. Adapting instructional strategies based on individual characteristics particularly visual, auditory, and kinesthetic learning styles enables a more adaptive, participatory, and contextual learning process. This approach not only yields positive effects on cognitive, affective, and psychomotor domains but also contributes to the development of students' motivation, autonomy, and sense of responsibility toward their learning process.

However, this study has several limitations. The research subjects involved only one class from a single school, which restricts the generalizability of the findings. Moreover, the relatively short implementation period limited the opportunity to assess the long-term impacts of integrating PjBL and differentiated instruction. In addition, a comprehensive quantitative evaluation of all learning domains, particularly affective and psychomotor aspects, was not conducted.

Based on these findings and limitations, it is recommended that future research be conducted with a broader scope, encompassing multiple educational levels and diverse school contexts to test the replicability of this instructional model. Employing a mixed-methods design is also suggested to provide more comprehensive insights through the combination of qualitative and quantitative data. Furthermore, the development of more specific evaluation instruments to measure 21st-century skills such as creativity, collaboration, and digital literacy represents a crucial area for further exploration.

Citations and References

- Ahmad, R., Putra, A., & Nasution, D. (2021). Pengaruh pembelajaran berdiferensiasi terhadap hasil belajar siswa berdasarkan gaya belajar. *Jurnal Pendidikan dan Pembelajaran*, 8(2), 145–153.
- Akhyaruddin, A., & Yusra, K. (2023). Implementasi model Project Based Learning (PjBL) dalam pembelajaran sintaksis Bahasa Indonesia. *Jurnal Dikdaya: Jurnal Ilmiah Pendidikan Dasar*, 13(1), 88–99.
- Almujab, S. (2023). Pembelajaran berdiferensiasi: Pendekatan efektif dalam menjawab kebutuhan diversitas siswa. *Oikos: Jurnal Kajian Pendidikan Ekonomi dan Ilmu Ekonomi*, 8(1).
- Amrin, A., Husnu, H., & Yusri, Y. (2024). Implementasi project-based learning untuk meningkatkan partisipasi aktif siswa. *Jurnal Inovasi Pendidikan*, 12(1), 22–30.
- Anugrah, M. S. W. (2022). Hubungan bimbingan belajar orang tua terhadap kreativitas belajar siswa. *Journal of Classroom Action Research*, 4(4), 139–147.
- Ayudia, A. M., Haryadi, H., & Setyaningsih, N. H. (2023). Differentiated learning design of independent curriculum based on project-based learning supports creative thinking skills in Indonesian language learning. *Jurnal Pembangunan Pendidikan: Fondasi dan Aplikasi*, 11(2).
- Beghetto, R. A. (2017). Creative self-efficacy in teaching and learning. In R. A. Beghetto & J. C. Kaufman (Eds.), *Nurturing creativity in the classroom* (2nd ed., pp. 56–70). Cambridge University Press.

- DePorter, B. (1992). *Quantum learning: Unleashing the genius in you*. Dell Publishing.
- Dewi, R. S. (2023). Kreativitas siswa dalam pembelajaran berbasis proyek: Studi di SMP Negeri 3 Jakarta. *Jurnal Pendidikan Kreatif*, 9(1), 50–58.
- Dewi, S. (2023). Penerapan model pembelajaran berbasis proyek untuk meningkatkan hasil belajar. *PTK: Jurnal Tindakan Kelas*, 3(2), 204–215.
- Faizin, M. B., Bintana, C. K., Alnaria, M. I. S., & Ahya, H. P. W. (2023). Peserta didik abad 21 perspektif Imam Al-Ghazali dalam pendidikan Islam. *Jurnal Pendidikan Islam*, 4(1), 8–19.
- Firdaus, A. M., & Bakhtiar, A. M. (2022). Strategi pembelajaran berdiferensiasi untuk mengatasi keberagaman tingkat ketanggapan siswa di UPT SDN 25 Gresik. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 8(2), 2135–2147.
- Firdaus, M. (2020). Efektivitas model project-based learning dalam meningkatkan hasil belajar. *Jurnal Ilmiah Pendidikan*, 7(3), 134–142.
- Fitriyah, F., & Bisri, M. (2023). Pembelajaran berdiferensiasi berdasarkan keragaman dan keunikan siswa sekolah dasar. *Jurnal Review Pendidikan Dasar: Jurnal Kajian Pendidikan dan Hasil Penelitian*, 9(2), 67–73.
- Gheysens, E., Consuegra, E., Engels, N., & Struyven, K. (2020). Differentiated instruction as an approach to establish effective teaching in inclusive classrooms. In *International Perspectives on Inclusive Education* (Vol. 15, pp. 415–432). Emerald Publishing Limited.
- Hasibuan, F. S. (2023). Dampak penerapan model pembelajaran berbasis proyek pada kemampuan siswa kelas VIII SMP IT Al-Munadi dalam menulis teks ulasan tahun pelajaran 2022–2023. *Bahastra: Jurnal Pendidikan Bahasa dan Sastra Indonesia*.
- Herwina, W. (2021). Optimalisasi kebutuhan murid dan hasil belajar dengan pembelajaran berdiferensiasi. *Perspektif Ilmu Pendidikan*, 35(2), 175–182.
- Hwang, G. J., Wu, P. H., & Chen, C. H. (2020). A collaborative learning approach to enhancing students' motivation and learning outcomes in a project-based learning environment. *Educational Technology & Society*, 23(1), 1–12.
- Khasanah, R. (2024). Memenuhi target kurikulum dan tantangan dalam mengelola keragaman siswa. *Primary*, 2(5), 279–288.
- Mahendra, I. W. E. (2017). Project based learning bermuatan etnomatematika dalam pembelajaran matematika. *JPI (Jurnal Pendidikan Indonesia)*, 6(1), 106–114.
- Marlina, L. (2019). Pembelajaran berdiferensiasi: Strategi meningkatkan hasil belajar siswa. *Jurnal Pendidikan*, 4(2), 90–98.
- McTighe, J., & Wiggins, G. (2005). *Understanding by design*. Association for Supervision and Curriculum Development.
- Nugroho, C. M. R., & Darmawan, P. (2024). Implementasi pembelajaran berdiferensiasi dalam perspektif teori belajar humanistik pada sekolah dasar: Studi literatur. *Journal of Innovation and Teacher Professionalism*, 2(3), 282–290.
- OECD. (2019). *PISA 2018 results (Volume I): What students know and can do*. OECD Publishing.
- Perni, N. N. (2019). Penerapan teori belajar humanistik dalam pembelajaran. *Adi Widya: Jurnal Pendidikan Dasar*, 3(2), 105.
- Pramesthi, A. D., Atmojo, I. R. W., & Ardiansyah, R. (2023). Pengaruh model project based learning berbasis pembelajaran diferensiasi terhadap *creative thinking skill* dan hasil belajar kognitif IPAS. *JPI (Jurnal Pendidikan Indonesia)*.
- Pratiwi, I., Pulungan, A. S. S., & Dumasari, D. (2020). Perbandingan keterampilan proses sains siswa dengan menggunakan model pembelajaran problem based learning (PBL) dan project based learning (PjBL) pada materi keanekaragaman hayati. *Jurnal Pelita Pendidikan*, 8(1).

- Purnawanto, A. T. (2023). Pembelajaran berdiferensiasi. *Jurnal Pedagogy*, 16(1), 34–54.
- Putra, E., Nugroho, Y., & Syahputra, F. (2023). Optimalisasi teknologi pendidikan dalam pembelajaran berdiferensiasi. *Jurnal Teknologi dan Pendidikan*, 5(2), 75–84.
- Rahayu, R., Sofyan, I., & Abidin, Y. (2022). Inovasi pembelajaran abad 21 dan penerapannya di Indonesia. *Jurnal Basicedu*, 6(2), 2099–2104.
- Rahmawati, S., Wahyudi, W., & Latif, M. (2021). Pengaruh pembelajaran berdiferensiasi terhadap motivasi belajar siswa SMP. *Jurnal Pendidikan dan Konseling*, 3(1), 15–23.
- Rizky, A., & Wulandari, D. (2022). Pengaruh pembelajaran kontekstual terhadap partisipasi aktif siswa. *Jurnal Pendidikan Sains Indonesia*, 10(1), 40–48.
- Sari, P., & Handayani, R. (2021). Implementasi scaffolding dalam pembelajaran berbasis proyek. *Jurnal Pendidikan*, 6(3), 212–220.
- Sawyer, R. K. (Ed.). (2006). *The Cambridge handbook of the learning sciences*. Cambridge University Press.
- Suherman, E., Maman, S., & Irawan, D. (2013). Pengaruh diferensiasi pembelajaran terhadap hasil belajar matematika siswa. *Jurnal Pendidikan dan Pembelajaran*, 19(2), 129–140.
- Suherman, S., Yusuf, M., & Damayanti, R. (2023). Efektivitas strategi pembelajaran berdiferensiasi dalam meningkatkan pemahaman konsep matematika. *Jurnal Pendidikan Matematika*, 8(1), 35–44.
- Suralaga, F. (2021). *Psikologi pendidikan: Implikasi dalam pembelajaran*. Raja Grafindo Persada.
- Swandewi, N. P. (2021). Implementasi strategi pembelajaran berdiferensiasi dalam pembelajaran teks fabel pada siswa kelas VII H SMP Negeri 3 Denpasar. *Jurnal Pendidikan Deiksis*, 3(1), 53–62.
- Tomlinson, C. A., & Imbeau, M. B. (2010). *Leading and managing a differentiated classroom*. ASCD.
- Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional. (2003).
- Yuliana, E., Harahap, R., & Setiawan, R. (2022). Peran pembelajaran berdiferensiasi dalam meningkatkan keterampilan berpikir kritis. *Jurnal Pendidikan dan Kebudayaan*, 17(2), 105–113.